



EPA Region 7 TMDL Review

TMDL ID 300 Water Body ID 1319

Water Body Name Second Nicolson Creek

Pollutant Sulfate

Tributary

State MO HUC 10290104

Basin Marmaton River

Submittal Date 5/10/2004

Approved yes

Submittal Letter

State submittal letter indicates final TMDL(s) for specific pollutant(s)/ water(s) were adopted by the state, and submitted to EPA for approval under section 303(d) of the Clean Water Act.

Submittal letter received on May 10, 2004.

Water Quality Standards Attainment

The water body's loading capacity for the applicable pollutant is identified and the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources is described. TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.

The WQS for sulfate in this TMDL is derived from a combined sulfate plus chloride numeric criterion of 1000 mg/L. This water body is listed only for sulfate, however, the TMDL establishes allocations for the combined criterion. By establishing an allocation for the combined criterion, the level of sulfate will be adequate to attain the numeric water quality criterion.

Numeric Target(s)

Submittal describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, site specific if possible, was developed from a narrative criterion and a description of the process used to derive the target is included in the submittal.

The target is based on the numeric water quality criterion. In this case, the numeric criterion is for sulfate plus chloride. The chloride levels are not influenced by loadings received from the abandoned coal mine lands. Thus, this TMDL establishes loadings for sulfate, which comes from the abandoned coal mine lands.

Link Between Numeric Target(s) and Pollutant(s) of concern

An explanation and analytical basis for expressing the TMDL through surrogate measures (e.g., parameters such as percent fines and turbidity for sediment impairments, or chlorophyll-a and phosphorus loadings for excess algae) is provided, if applicable. For each identified pollutant, the submittal describes analytical basis for conclusions, allocations and margin of safety that do not exceed the load capacity.

The link between the numeric target and the sulfate pollutant is direct, and expressed in concentration units.

Source Analysis

Important assumptions made in developing the TMDL, such as assumed distribution of land use in the watershed, population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources, are described. Point, non point and background sources of pollutants of concern are described, including magnitude and location of the sources. Submittal demonstrates all significant sources have been considered.

The source of excessive sulfate is water from abandoned coal mine lands. There are no point sources and background levels of sulfate are insignificant. All significant sources of sulfate have been considered.

Allocation

Submittal identifies appropriate wasteload allocations for point, and load allocations for nonpoint sources. If no point sources are present the wasteload allocation is zero. If no nonpoint sources are present, the load allocation is zero.

The allocations are in units of concentration, and can not be summed as $LA + WLA + MOS = TMDL$. The allocations are established for the sum of two substances, sulfate plus chloride, which agrees with the Missouri standards.

WLA Comment

The WLA for sulfate is established as zero.

LA Comment

The LA for sulfate is established as 970 mg/L of sulfate plus chloride.

Margin of Safety

Submittal describes explicit and/or implicit margin of safety for each pollutant. If the MOS is implicit, the conservative assumptions in the analysis for the MOS are described. If the MOS is explicit, the loadings set aside for the MOS are identified and a rationale for selecting the value for the MOS is provided.

The margin of safety is explicit, and selected as a 3% reduction of the loading capacity. The chloride levels were considered in this margin of safety. The margin of safety was based on the precision of the measurements of chloride and sulfate.

Seasonal Variation and Critical Conditions

Submittal describes the method for accounting for seasonal variation and critical conditions in the TMDL(s).

The allocations are for all seasons, because the processes that cause the excessive levels of sulfate are not significantly affected by the seasons.

Public Participation

Submittal describes public notice and public comment opportunity, and explains how the public comments were considered in the final TMDL(s).

A draft copy of this TMDL was placed on public notice from March 12, 2004 to April 11, 2004. No public comments were received. Six public meetings allowed input from the public, held between August 18 and September 22, 1999. No comments regarding this TMDL were received during the public meetings.

Monitoring Plan for TMDL(s) Under Phased Approach

The TMDL identifies the monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of WQS, and a schedule for considering revisions to the TMDL(s) (where phased approach is used).

Since this is a phased TMDL, MDNR will continue to monitor this stream; eight samples per 3 sites will be collected in fiscal year 2004.

Reasonable assurance

Reasonable assurance only applies when reduction in nonpoint source loading is required to meet the prescribed waste load allocations.

Not required.
